

## **TB IGRA TEST (collection Mon – Wed only)**

Use the following collection tubes: (available from BCCDC only)

1. Nil Control (special Grey Top)
2. TB Antigen (special Red Top)
3. Mitogen Control (special Purple Top)

**Ordering tubes from BCCDC:** phone 1-604-707-2628 Zoonotics Diseases Lab & order enough tubes to do 3 months of collections allowing 1 week for order to be filled.

### **COLLECTION INSTRUCTIONS**

1. Collect 1mL of blood by venipuncture directly into each of the 3 special blood collection tubes.
  - ***The black mark on the side of the tubes indicates the 1mL fill volume. Each tube must be completely filled to the fill mark. If volume is inadequate, another sample must be obtained.***
  - 1 mL tubes draw blood relatively slowly so keep the tube on the needle for 2-3 seconds once the tube appears to have completed filling to ensure that the correct volume is drawn.
  - **If a “butterfly needle” is being used to collect the tubes draw 2-3 mls into a “discard” tube prior to the collection tubes being drawn to purge the line.**
2. Mix the tubes by **shaking the tubes 10 times** to ensure that **the entire inner surface of the tube** has been coated with blood.
  - Thorough mixing is required to ensure complete integration of the antigens that have been dried onto the inner wall of the blood collection tubes with the blood.
  - Frothing (foaming) of the blood is expected during the shaking process however this does not affect the performance of the assay
3. Label tubes appropriately.
4. The tubes must be transferred to a 37°C ± 1°C incubator (VWR TB Incubator in Accessioning) as soon as possible and within 16 hours of collection. Incubator to be checked for specimens each morning when temperatures are recorded.
  - **Do not refrigerate or freeze the blood samples.**

### **INCUBATION OF BLOOD TUBES**

1. If the blood is not incubated immediately after collection, **mixing of the tubes must be repeated immediately prior to incubation.**
2. Incubate the tubes **UPRIGHT** at 37°C for 16 to 24 hours. The incubator does not require CO<sub>2</sub> or humidification.

## **CENTRIFUGATION**

1. After incubation of the tubes at 37°C for 16-24 hrs, centrifuge tubes @ **3000 rpm for 15 minutes.** Re-centrifuge at a higher speed if the gel does not separate the cells from the plasma.
2. Working in a Biological Safety Cabinet (BSC) transfer the plasma to the correct vial.
3. Match each patient's sample to the correct cryovial.
  - Grey top tube to grey cap cryovial
  - Red top tube to red cap cryovial
  - Purple top tube to purple cap cryovial
  
  - Pour off plasma into the matching coloured aliquot tube or transfer with a sterile transfer pipette.
4. Store aliquoted plasma at 2-8°C for up to 5 days or at -30°C for extended periods.

## **TRANSPORTATION**

1. Ship samples cool to BCCDC – Attn: ZEP LAB.
2. Place PHSA ZEP (Zoonotics & Emerging Pathogens) Requisition into outside pocket of biohazard bag.
  - TB IGRA Testing Criteria must be filled in.
3. Follow TDG regulations – specimens can be shipped Exempt Human Specimens.
4. Fax requisition to BCCDC ZEP lab @ 1-604-707-2602

### Miscellaneous TB Information:

**Acid Fast Bacilli:** The majority of these bacilli in patients' sputums are Mycobacteria. Species may be mycobacterium tuberculosis (MTB) or species other than MTB referred to as MOTT.

**Active Infectious Tuberculosis:** A person with pulmonary or laryngeal TB with a positive sputum smear for acid fast bacilli.

**BCG Vaccine:** Bacille Calmette-Guerin vaccine that is an attenuated strain of Mycobacterium *bovis* and is used to protect against severe forms of TB.

**Booster Effect:** An increase of 6 mm or more in a TST response from a previous TST in the absence of contact with an active case.

**Cell-Mediated Immunity:** A type of immune reactivity in which T lymphocytes participate.

**Contact:** A person identified as having come in contact with someone who is diagnosed with active pulmonary TB which means there is a possibility of transmission.

- Type 1 = Household contact. Share the same air space for greater than 4 hours per week
- Type 2 = Non-Household contact. Share the same air space for 2-4 hours per week
- Type 3 = Casual Contact. Share the same air space for less than 2 hours per week.

**Delayed hypersensitivity:** A type of cell-mediated immune response that occurs when T cells encounter their specific antigen and lymphokines are released.

**Induration:** The area of palpable firmness or swelling that surrounds the site of TST injection. This induration is what is read and should be recorded in millimeters. See the TB Manual for more information on reading TSTs.

**Latent TB:** The TB infection is controlled by the immune system and a latent (dormant) infection results. This person does not have any symptoms of TB and **can't** spread the disease to others.

**Mycobacterium tuberculosis:** The micro-organism causing TB.

**Positive tuberculin skin test (TST):** Reaction to TST with the purified protein derivative (PPD) which suggests the person has been infected with tubercle bacilli. When interpreting a positive TST, the size, positive predictive value and risk of disease should be considered for each client.

- 5-9 mm reaction is considered a positive TST if the client is HIV infected; a close contact of active TB, abnormal chest X-ray with fibronodular disease, other immune suppression (TNF-alpha inhibitors, chemotherapy, IVDU).

- Greater than or equal to 10mm is considered a positive TST.

**Preventative Treatment:** The treatment, usually isoniazid (INH), given to individuals infected with *M. tuberculosis* but without active disease. Also known as chemoprophylaxis or treatment of latent TB infection.

**Tubercle bacilli:** A collective term to refer to organisms in the Mycobacterium tuberculosis complex or to *M. tuberculosis*.

**Tuberculin convertor:** Any person with a tuberculin reaction which has converted from a “negative” to a “positive” reaction.

**Tuberculosis (TB):** A chronic bacterial infection due to Mycobacterium tuberculosis, characterized pathologically by the formation of granulomas. The most common site is the lung (pulmonary TB), but other organs may be involved (extrapulmonary TB).

**Tuberculin Skin Test (TST):** Intradermal injection of PPD derived from Mycobacterium tuberculosis bacteria to identify whether a person has a delayed type hypersensitivity reaction to tuberculin antigens.

## **REFERENCES**

<http://www.bccdc.ca/dis-cond/a-z/t/Tuberculosis/default.htm>

[http://www.bccdc.ca/NR/rdonlyres/09999755-774E-404C-A947-6EE7E9D38B9D/0/DST\\_TBScreeing\\_TST\\_Final\\_15Feb101.pdf](http://www.bccdc.ca/NR/rdonlyres/09999755-774E-404C-A947-6EE7E9D38B9D/0/DST_TBScreeing_TST_Final_15Feb101.pdf)